

Small Business Innovation Research Small Business Technology Transfer

Mark Davidson Jet Propulsion Laboratory – California Institute of Technology |
SBIR/STTR Overview | November 14, 2018

Participating Federal Agencies

SBIR + STTR Programs



Department of
Defense (DoD)



Department of
Health and
Human Services
(HHS)



Department of
Energy (DoE)



National Aeronautics
and Space
Administration
(NASA)



National Science
Foundation (NSF)

SBIR Program Only



Department of
Agriculture
(USDA)



Department of
Education (DoEd)



Department of
Transportation (DoT)



Environmental
Protection
Agency (EPA)



Department of
Homeland Security
(DHS)



Department of
Commerce
(DoC)

The SBIR / STTR Programs



Small Business Innovation Research (SBIR)

- A set-aside program for small business to engage in Federal R&D – with potential for commercialization
- For FY18, 3.2% of Federal agencies Extramural R&D budgets greater than \$100M per year

Small Business Technology Transfer (STTR)

- A set-aside program to facilitate cooperative R&D between small business concerns and U.S. research institutions – with potential for commercialization
- For FY18, 0.45% of the extramural research budget for all agencies with a budget greater than \$1B per year

SBIR / STTR Programs Vision and Mission

VISION

Empower small businesses to deliver technological innovation that contributes to NASA's missions, provides societal benefit, and grows the US economy.

NASA's SBIR and STTR programs have awarded **more than \$3.3 billion** to research-intensive American small businesses

MISSION

Create opportunities through SBIR/STTR awards to leverage small business knowledge and technology development for maximum impact and contribution

Engineers and scientists from **more than 12,000** small businesses in all 50 States, DC and Puerto Rico have participated

SBIR Eligibility Requirements

- At least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in the United States
- Organized for-profit U.S. small business (500 or fewer employees)
- SBC located in the U.S.
- Principal Investigator's (PI) primary employment must be with the SBC during the project
- For Phase I, no more than 1/3 of funding (less profit) can be subcontracted, 1/2 for Phase II



STTR Eligibility Requirements

- Same ownership, size, and SBC location requirements as the SBIR program
- In addition:
 - Formal Cooperative R&D effort with a U.S. Research Institution
 - Minimum 40% by small business, 30% by U.S. Research Institution (still have 30% that can be shared between the two parties or used for subcontracting, etc.)
 - Small business is Prime, Principal Investigator can be from Small Business Concern or Research Institution
 - The U.S. research institution (RI) must be an accredited college/university, a federal research and development center, or other non-profit research organization



SBIR/STTR Program Process

NASA SBIR/STTR PROCESS



Go to sbir.nasa.gov/guide for details

Learning about NASA's Needs

Focus Areas

NASA's research subtopics are organized by "Focus Areas" that group interests and related technologies.

- **Identify** the Area(s) closest to your innovation/idea
- **Go** to our website to research
- **Prepare to write** a proposal tailored to NASA's needs

<https://sbir.nasa.gov/solicitations>

2018 Focus Areas	
1. In-Space Propulsion Technologies	12. Entry, Descent and Landing Systems
2. Power and Energy Storage	13. Information Technologies for Science Data
3. Autonomous Systems for Space Exploration	14. In-Space and Advanced Manufacturing
4. Robotic Systems for Space Exploration	15. Lightweight Materials, Structures, Assembly, and Construction
5. Communications and Navigation	16. Ground and Launch Processing
6. Life Support and Habitation Systems	17. Thermal Management Systems
7. Human Research and Health Maintenance	18. Air Vehicle Technology
8. In-Situ Resource Utilization	19. Integrated Flight Systems
9. Sensors, Detectors and Instruments	20. Airspace Operations and Safety
10. Advanced Telescope Technologies	21. Small Spacecraft Technologies
11. Spacecraft and Platform Systems	22. ISS Utilization and Microgravity Research

NASA SBIR/STTR Website www.sbir.nasa.gov

The NASA SBIR/STTR website is located at www.sbir.nasa.gov

Research NASA's Needs
Annual Solicitations
including past years

Looking to Join the Program?

- Program Basics
- Forms Library
- Model Contract
- In-depth Training Resources and FAQs

THE CONCEPT

REQUEST FOR INFORMATION (RFI)

SYSTEM MODERNIZATION UPDATES

MODERNIZATION FOR EXISTING AWARDEES

THE CONCEPT - Spring 2018 Newsletter

Download to Read

Proposers

- SBIR/STTR Basics
- SBIR/STTR Schedule
- Interactive Participation Guide
- SBIR/STTR Firms Library
- Model Contract
- Training Resources
- FAQs

Awardees

- SBIR/STTR Schedule
- SBIR/STTR Firms Library
- Additional Sources of Assistance
- Awardee Firm's EHB
- Training Resources
- FAQs

Publications

- SBIR/STTR Newsletter – The Concept
- Interactive Participation Guide
- SBIR/STTR Annual Report
- FY 2016 Economic Impact Report

Contact the Program
SBIR/STTR Helpdesk
and Program Points of
Contact

Program 2018 Initiatives

I-Corps

In partnership with the National Science Foundation (NSF), NASA is offering the I-Corps program to educate selected teams on how to translate technologies from the laboratory into the marketplace.

<http://sbir.nasa.gov/content/I-Corps>



Mentor-Protégé Program

The NASA Mentor-Protégé Program encourages NASA prime contractors to assist eligible protégés to:

- Enhance their capabilities to perform on NASA contracts and subcontracts,
- Foster the establishment of long-term business relationships between these entities and NASA prime contractors, and
- Increase the overall number of these entities that receive NASA contract and subcontract awards.

For more information on the Mentor-Protégé Program visit:

<http://www.osbp.nasa.gov/mpp/index.html>



Some Tips

- *All* required items of information must be contained in your proposal – *please carefully follow directions*
- Observe proposal submission *deadlines*, *content* (page count) and *formatting rules*
- Eligibility is determined at time of the award
- The PI is *not* required to have a Ph.D.
- The PI *is* required to have expertise to oversee project scientifically and technically
- Applications may be submitted to different agencies for *similar work*
- Awards may ***not*** be accepted from different agencies ***for duplicative projects***
- Do not plan on using Government facilities *unless* they are not available in the private sector

PHASE III SUCCESS

SNAPSHOT

A record-breaking aircraft was designed to travel far distances to collect data in very cold climates by innovating existing technologies through a joint effort funded by NASA and DoD.

LONG ENDURANCE AIRCRAFT SET WORLD RECORD

Vanilla Aircraft, Falls Church, VA

Innovation

A long endurance Unmanned Aircraft System (UAS) was designed by Vanilla Aircraft to cover thousands of square miles of treacherous terrain in a single flight on one tank of fuel through temperatures below -40°F . The newly-designed UAS is specifically outfitted with instruments to collect critical information for research missions. Due to its capability for longer missions, fewer missions are needed, translating into reduced operating and personnel costs.

A non-stop, record-breaking unrefueled 56-hour test flight proved the aircraft could meet both NASA's need to explore remote locations with extreme cold climates as well as the Department of Defense's desire to add capabilities to support ground forces in critical missions.



SBIR/STTR Success

PHASE II SUCCESS

SNAPSHOT

A ground-breaking tool for NASA scientists to study air traffic costs of the United States National Airspace System.

Finding Cost Efficiencies in US National Airspace Operations

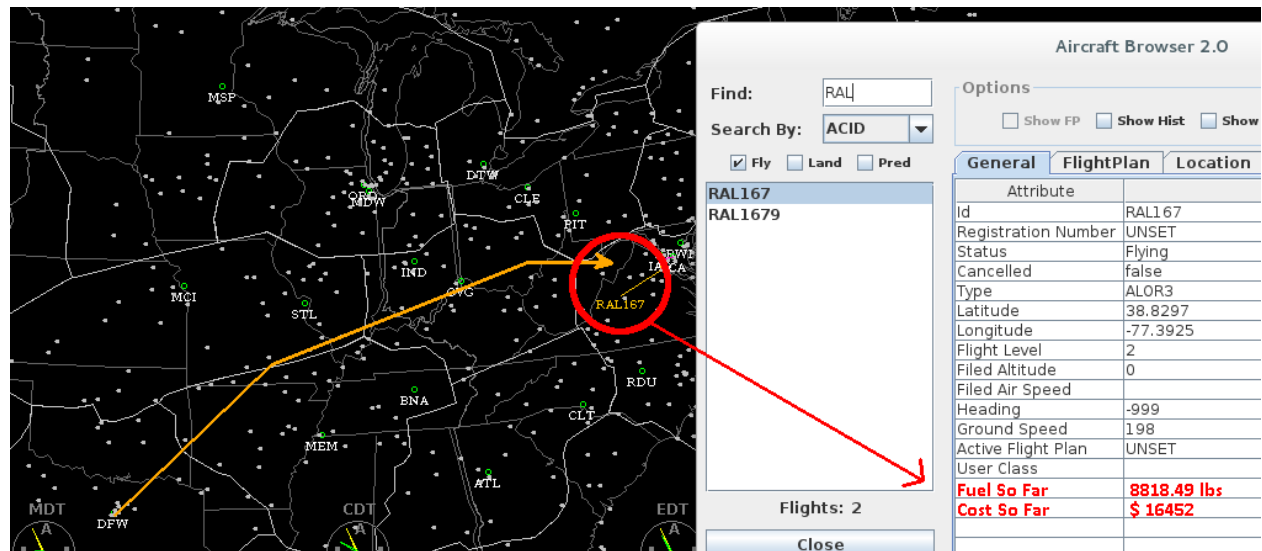
Robust Analytics, Gambrills, MD

Challenge

The United States National Airspace System (NAS) is comprised of airspace, along with navigation facilities and airports. There are approximately 41,000 NAS operational facilities in the US. Efficient, cost-effective and safe air traffic management operations are critical for NAS.

Innovation

Robust Analytics developed the Air Traffic Cost Assessment Tool (ATCAT), a model that estimates the cost of operating commercial aircraft in the NAS. This innovation offers a greater understanding of the cost drivers for aircraft operators and will help to validate the cost and revenue impacts.



SBIR/STTR Success

PHASE III SUCCESS

IRIS AO products derived from SBIR funding are available for world-wide distribution by Edmund Optics - approximately \$2 million revenue generated annually from the technology developed from NASA SBIR. NASA's SBIR program invested \$875,000.

SNAPSHOT

Since the first exoplanet discovery in 1995, NASA has dedicated resources to develop deformable mirrors for powerful telescopes to determine if there are signs of life beyond Earth on planets outside our solar system.

Special Mirrors Help NASA Detect Planets

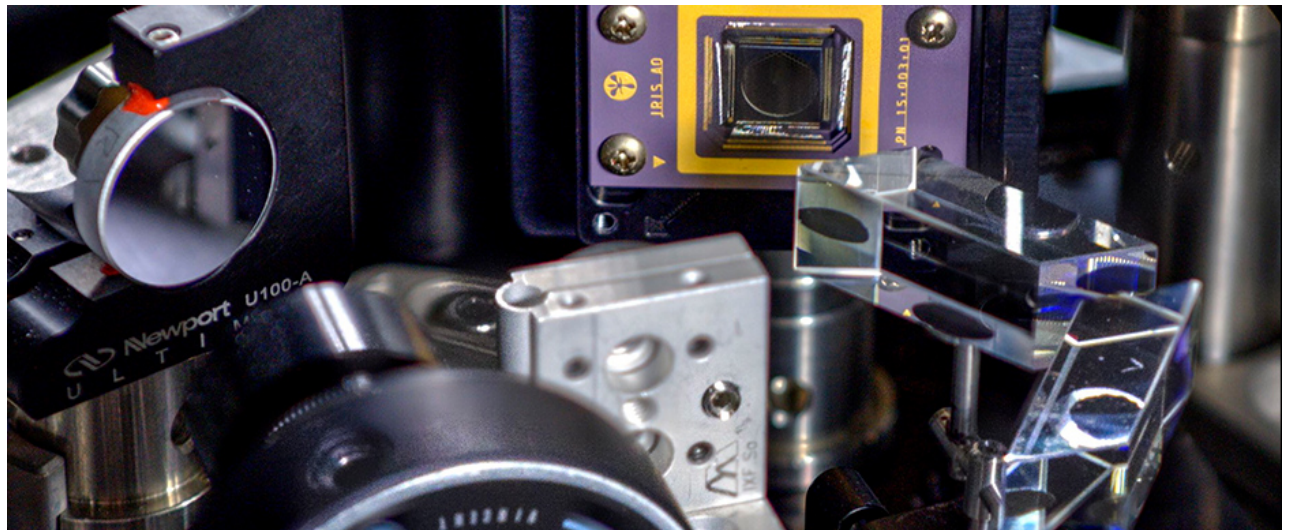
IRIS AO, Inc., Berkley, CA

Challenge

Starlight can lower the contrast in images sent back to Earth from a telescope traveling in space, making it harder to detect planets light years away.

Innovation

IRIS AO, Inc. helped NASA to develop deformable mirror (DM) technology that can filter out direct light from stars that limit the visibility of exoplanets. The technology is a key component of starlight blocking instruments on telescopes. The DM is used to correct optical aberrations that otherwise reduce the resolution of an image.



Contact us and let's innovate together

Website

www.sbir.nasa.gov

Sign up for our Newsletter

<https://sbir.nasa.gov/info>

NASA SBIR/STTR Help Desk

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JPL

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